

CLAIMS

1. A method for the *in vitro* diagnosis of breast cancer, characterized in that it consists in determining the presence of NGF in a biological sample derived from a patient suspected of suffering from breast cancer.

2. The method as claimed in claim 1, characterized in that the presence of NGF is demonstrated by direct detection of NGF in said biological sample.

3. The method as claimed in claim 2, characterized in that detection of NGF is carried out by means of an immunoassay or by mass spectrometry.

4. The method as claimed in either of claims 2 and 3, characterized in that said biological sample consists of biological fluid or of a tissue originating from the biopsy of the tumor or of metastases.

5. The method as claimed in claim 4, characterized in that the biological sample consists of a tissue originating from the biopsy of the tumor or of the metastases of the patient.

6. The method as claimed in claim 4, characterized in that the biological sample consists of biological fluid, preferably pretreated in order to isolate the circulating tumor cells contained in said fluid.

7. The method as claimed in claim 6, characterized in that the circulating tumor cells are then cultured under conditions such that they secrete NGF.

8. The method as claimed in either of claims 6 and 7, characterized in that the circulating tumor cells are also cultured under conditions that block the NGF inside said cells.

9. The method as claimed in claim 1, characterized in that the detection of NGF is demonstrated by culturing NGF-sensitive cells in the presence of said biological sample.

10. The method as claimed in claim 9, characterized in that said biological sample consists of a sample of biological fluid, preferably pretreated in order to isolate the circulating tumor cells contained in said fluid.

11. The method as claimed in claim 10, characterized in that the circulating tumor cells are then cultured under conditions such that they secrete NGF.

12. The method as claimed in claim 1, characterized in that the detection of
5 NGF is demonstrated by detecting the NGF mRNA in said biological sample.

13. The method as claimed in claim 12, characterized in that the said biological sample consists of a sample of biological fluid or of a tissue originating from the biopsy of the tumor or of the metastases of the patient.
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14. The method as claimed in claim 13, characterized in that the biological sample consists of a tissue originating from the biopsy of the tumor or of the metastases of the patient.

15. The method as claimed in claim 13, characterized in that the biological sample consists of biological fluid, preferably pretreated in order to isolate the circulating tumor cells contained in said fluid.
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16. The use of the method as claimed in any one of claims 1 to 15 in early
20 diagnosis, screening, therapeutic follow-up, prognosis and the diagnosis of relapse in the case of breast cancer.

17. The use of an NGF binding partner or of an NGF inhibitor for preparing a medicinal product, it being understood that, in the case of cancer, the NGF
25 binding partners are not receptors for NGF or active fragments of these receptors.

18. The use as claimed in claim 17, characterized in that the medicinal product is useful for blocking said proliferation of breast cancer cells and remote dissemination in patients suffering from breast cancer.
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19. The use as claimed in either of claims 17 and 18, characterized in that the NGF binding partner is an anti-NGF antibody.

20. The use as claimed in any one of claims 17 to 19, characterized in that
35 said NGF binding partner or said NGF inhibitor has, beforehand, been placed under conditions such that it specifically enters the cells of interest.

21. A pharmaceutical composition, characterized in that it comprises, as active principle, at least one NGF binding partner or one NGF inhibitor,

optionally combined with a pharmaceutically acceptable excipient, it being understood that, in the case of cancer, the NGF binding partners are not receptors for NGF or active fragments of these receptors.

- 5 22. A method of treating breast cancer which comprises the administration, to a patient, of an effective dose of an NGF binding partner or of an NGF inhibitor.